THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 41

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YUTAKA HAYASHI, YOSHIKAZU KOJIMA,
RYOJI TAKADA, and MASAAKI KAMIYA

Appeal No. 95-3675
Application 08/025,822[1]

HEARD: Feb. 2, 1998

Before KRASS, LEE, and TORCZON, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 3 through 7, 9 and 10. Claims 1 and 11 through 19 have been allowed. Claim 8 has been canceled. By amendment of November 7, 1994 (Paper No. 23), claims 9 and 10 should

[1] Application for patent filed March 3, 1993. According to appellants, this application is a continuation of Application 07/492,085, filed March 12, 1990, now abandoned.

depend from independent claim 3 and not from claim 8 as recited in the copy of the claims forming the appendix to the principal brief.

The invention pertains to a semiconductor device which can be employed as both a volatile and a nonvolatile memory. More particularly, information is not erased from the memory cell even after carrying out random-access reading. The invention is best understood from an analysis of independent claim 3 together with reference to Figure 1. Claim 3 is reproduced as follows:

3. A semiconductor memory cell formed on a substrate, comprising:

storage means disposed on the substrate for storing electric charge to memorize nonvolatile information;

injecting means for injecting electric charge into the storage means;

supplying means for supplying electric charge to the injecting means;

volatile control means operable to write volatile information and to temporarily maintain the volatile information, the volatile control means being interposed between the injecting means and the supplying means for controlling flow of electric charge from the supplying means to the injecting means according to the volatile information temporarily written in the volatile control means;

random-access potential setting means for setting a potential of the volatile control means on a random access basis to write volatile information into the volatile control means, the random-access potential setting means including switching means for effecting setting of the potential of the volatile control means on a random access basis; and

nonvolatile control means for controlling the injection of the electric charge from the injecting means to the storage means

to thereby write thereinto nonvolatile information which is representative of the corresponding volatile information written in the volatile control means.

The examiner relies on the following reference:

Logie 4,924,278 May 8, 1990

Claims 3 through 7, 9 and 10 stand rejected under 35 U.S.C. ' 103 as unpatentable over Logie.

Reference is made to the briefs and answer for the respective positions of appellants and the examiner.

OPINION

We reverse.

In applying Logie to independent claim 3, the examiner identifies, in Figure 4 of Logie, a storage means 38, injecting means 55 and 24, supplying means 22, volatile control means 25 and a random-access potential setting means 28. The examiner contends that it would have been "obvious that the signals are applied to the volatile control means on a random access basis to write volatile information into the volatile control means" [answer-page 3].

The examiner's position, incorrect in our view, is that the instant claim language is so broad as to encompass that which is taught by Logie.

First, appellants cite In re Donaldson, 16 F.3d 1189, 1193, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994) for the proposition that 35 U.S.C. ' 112, sixth paragraph, requires that the means-plus-

function language of the instant claims be construed to cover the corresponding structure, and its equivalents, taught by the instant disclosure. The switching means of the instant disclosure, and its equivalents, shown, for example on the right side of Figure 1 and in Figures 5 and 6 constitute the disclosed structure for the claimed "random-access potential setting means for setting a potential of the volatile control means…"

While there may be debate on what constitutes an "equivalent" to this disclosed structure, and the examiner never comes to grips with this issue as the examiner never responded to appellants' reply brief, the examiner admits [answer-page 3] that "it is clear that appellant's [sic, appellants'] discloses [sic, disclosed] structure is different from the structure taught by Logie." Accordingly, the examiner recognizes that the disclosed structure to which the claimed "means-plus-function" (relating to the "random-access potential setting means") language refers, in accordance with 35 U.S.C. ' 112, paragraph 6, is not taught or suggested by Logie.

More particularly, the claimed "random-access potential setting means for setting a potential of the volatile control means…" is construed to include a switch (FET or diode arrangement) including a source region connected to a gate (which is the volatile control means) and another gate connected to a word line. In Logie, however, the word line is connected

directly to control gate 28 which is situated directly above channel region 25, considered to be the “random-access potential setting means.” While a voltage applied to the word line in Logie activates transistor 20, the “volatile control means” 25 therein does not maintain the voltage potential when control gate electrode 28 is deactivated because “volatile control means” 25 is controlled in response to data on the word line supplied to control gate electrode 28. Thus, Logie does not appear to teach or suggest the claimed “switching means for effecting setting of the potential of the volatile control means on a random access basis.”

Thus, Logie does not appear to disclose or suggest either the structure or the function set forth in independent claim 3. Accordingly, the examiner’s decision rejecting claims 3 through 7, 9 and 10 under 35 U.S.C. ' 103 is reversed.

REVERSED

Errol A. Krass Administrative Patent Judge	)	
Jameson Lee Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
Richard Torczon Administrative Patent Judge	)	

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